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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/543,628	04/05/2000	Nancy E. Iwamoto	30-5010(4962)	6586

7590 07/27/2004

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EXAMINER
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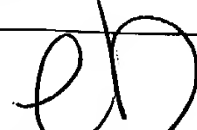
FEELY, MICHAEL J

ART UNIT	PAPER NUMBER
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1712

DATE MAILED: 07/27/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	09/543,628	IWAMOTO, NANCY E.	
	<b>Examiner</b>	<b>Art Unit</b>	
Michael J Feely	1712		

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 29 June 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 40-42, 44-46, 48-51 and 53-57 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 40-42, 44-46, 48-51 and 53-57 is/are rejected.
- 7) ☒ Claim(s) 49-51 and 53-57 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 April 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>0304</u> . | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 29 June 2004 has been entered.

### ***Pending Claims***

2. Claims 40-42, 44-46, 48-51, and 53-57 are pending.

### ***Previous Objections to the Specification***

3. The following objection to the Specification was made in the Office action dated 26 February 2003. The objection is maintained because Applicant has failed to address the issue in the responses filed 31 July 2003 and 29 June 2004:

The following is a quotation of the first paragraph of 35 USC §112:

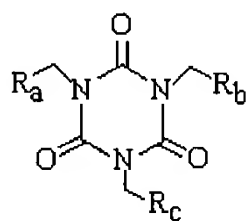
The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same, and shall set forth the best mode contemplated by the inventor of carrying out his invention.

The following is a quotation of 37 CFR §1.71(a):

(a) The specification must include a written description of the invention or discovery and of the manner and process of making and using the same, and is required to be in such full, clear, concise, and exact terms as to enable any person skilled in the art or science to which the invention or discovery appertains, or with which it is most nearly connected, to make and use the same.

The specification is objected to under 37 CFR §1.71 because:

The specification describes a polymer produced from at least one monomer having the formula:



wherein each of  $R_a$ ,  $R_b$ ,  $R_c$  are independently selected from the group *consisting of*: a hydroxylated aliphatic side chain, an epoxy glycol, an ethoxy ether, and glycol ether. The specification fails to demonstrate how this monomer is made, and it also fails to demonstrate how the resulting polymer is made.

The specification is silent regarding how the specific R-groups are attached to the isocyanurate ring prior to, during, or after polymerization. There is no discussion of starting materials or reaction mechanisms involved in the production of these monomers.

Furthermore, there is no discussion regarding how the monomers are polymerized. As with all monomers, they are capable of polymerization; however, Applicant fails to disclose a mechanism by which polymerization is achieved.

It is the Examiner's stance that such knowledge would not have been possessed by one skilled in the art at the time of the invention, and the Specification fails to provide an explanation that would provide such knowledge to one skilled in the art.

4. The objection to the disclosure set forth section 12 of the previous Office action (dated 5 January 2004) has been overcome by amendment.

#### ***Previous Claim Objections***

5. The objection to claims 43, 47, and 52 has been rendered moot by the cancellation of claims 43, 47, and 52.

6. The objection to claims 44, 48, and 53 have been overcome by amendment.

***Previous Claim Rejections - 35 USC § 112***

7. The rejection of claims 43, 47, and 52 under 35 U.S.C. 112, second paragraph, has been rendered moot by the cancellation of claims 43, 47, and 52.

8. The rejection of claims 40-42, 44-46, 48-51, and 53-55 under 35 U.S.C. 112, second paragraph, has been overcome by amendment.

***Previous Claim Rejections - 35 USC § 102/103***

9. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

10. The rejection of claims 43, 47, and 52 under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Saida et al. (US Pat. No. 5,718,039) has been rendered moot by the cancellation of claims 43, 47, and 52.

11. The rejection of claims 40-42, 44-46, 48-51, and 53-55 under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Saida et al. (US Pat. No. 5,718,039) has been withdrawn.

***Claim Rejections - 35 USC § 112***

12. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

13. Claims 40-42, 44-46, 48-51, and 53-57 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

14. In all of the pending claims a polymer candidate is described as one, *wherein the candidate polymer comprises a high adhesive strain component with respect to the candidate*

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*substrate (or an additional candidate polymer)*. The limitation is open to multiple interpretations:

a) wherein the candidate comprises a material (component) that exhibits a high adhesive strain relative to the adhesive strain of the other material;

b) wherein the candidate comprises a material (component) that exhibits a high adhesive strain when coupled to the other material;

If interpretation a) is used, it is unclear what the standard is for adhesive strain, i.e. when these material are bonded to what kind of material? This gets even more complicated in claim 49 because the claim recites that the first polymer exhibits a high adhesive strain relative to the second polymer *AND* the second polymer exhibits a high adhesive strain relative to the first polymer. It is unclear how both of these limitations can be simultaneously satisfied.

Interpretation b) appears to make more sense; hence, for the sake of the prior art search, this interpretation has been relied upon.

Furthermore, it should be noted that Applicant fails to define the relative term *high adhesive strain*. This relative terminology does not appear to have universal acceptance in the prior art because the quality of an adhesive bond varies depending on the materials that are used. What might be considered *high* when bonding something to a glass substrate may not be the same as *high* when bonding something to a concrete substrate.

### ***Claim Objections***

15. Claims 49-51 and 53-57 are objected to because of the following informalities: these claims describe a three layered structure, wherein the candidate substrate, the candidate first polymer, and the candidate second polymer are coupled to one another to form *an interface*.

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However, it appears that at least two interfaces are formed when these materials are coupled together. Appropriate correction is required.

***Claim Interpretation***

16. Claim 40 has been interpreted as follows:

40. An electronic component comprising:

1) a candidate substrate; and

2) a candidate polymer, wherein the candidate polymer comprises a material that exhibits an adhesive strain when coupled to the candidate substrate;

wherein the candidate substrate and the candidate polymer are coupled to one another to form an interface, and wherein the substrate and the polymer are selected as candidates based on a computer software program.

17. Claim 49 has been interpreted as follows:

49. An electronic component comprising:

1) a candidate substrate;

2) a candidate first polymer, wherein the candidate first polymer comprises a material that exhibits an adhesive strain when coupled to the candidate substrate and when coupled to the candidate second polymer; and

3) a candidate second polymer, wherein the candidate second polymer comprises a material that exhibits an adhesive strain when coupled to the candidate first polymer;

wherein the candidate substrate, the candidate first polymer and the candidate second polymer are coupled to one another to form a multi-layered article having at least

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two interfaces, and wherein the first polymer and the second polymer are selected as candidates based on a software program.

***Claim Rejections - 35 USC § 102/103***

18. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

19. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

20. Claims 40-42, 44-46, 48-51, and 53-57 rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Watanabe et al. (US Pat. No. 3,932,689).

Regarding claims 40-42, 44-46, 48, 56, and 57, Watanabe et al. disclose **(40)** an electronic component (Abstract; Example 1) comprising: 1) a candidate substrate (Example 1: column 9, lines 45-50 **OR** Example 1: column 9, lines 50-62); and 2) a candidate polymer, wherein the candidate polymer comprises a material that exhibits an adhesive strain when coupled to the candidate substrate (Example 1: column 9, lines 29-45); wherein the candidate substrate and the candidate polymer are coupled to one another to form an interface (Example 1: column 9, lines 29-62); **(44)** wherein the candidate polymer comprises at least one of the following chemical precursors *see claim for list* (Example 1: column 9, lines 32-36); and **(45 &**



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**46)** wherein the candidate polymer is amorphous, *crosslinked*, crystalline or branched (Example 1: column 9, lines 29-62; column 5, lines 66-68).

Regarding claims 49-51 and 53-57, Watanabe et al. disclose **(49)** An electronic component (Abstract; Example 1) comprising: *1)* a candidate substrate (Example 1: column 9, lines 50-62); *2)* a candidate first polymer, wherein the candidate first polymer comprises a material that exhibits an adhesive strain when coupled to the candidate substrate and when coupled to the candidate second polymer (Example 1: column 9, lines 29-45); and *3)* a candidate second polymer, wherein the candidate second polymer comprises a material that exhibits an adhesive strain when coupled to the candidate first polymer (Example 1: column 9, lines 45-50); wherein the candidate substrate, the candidate first polymer and the candidate second polymer are coupled to one another to form a multi-layered article having at least two interfaces (Example 1: column 9, lines 29-62); **(53)** wherein at least one of the candidate polymers comprises at least one of the following chemical precursors *see claim for list* (Example 1: column 9, lines 32-36); and **(54 & 55)** wherein at least one of the candidate polymers is amorphous, *crosslinked*, crystalline or branched (Example 1: column 9, lines 29-62; column 5, lines 66-68).

Watanabe et al. do not disclose the electronic component according to claim 40 or 49, wherein: **(40 & 49)** the substrate, the first polymer (and second polymer) **are selected** as candidates based on a software program; wherein:

**(41 & 50)** the **software program comprises** strain cycling **data**; **(56)** wherein the material that exhibits high adhesive strain **is determined** by the software program; and **(57)** wherein the software program **determines** strain intercept; or

(42 & 51) the software program evaluates at least one property of the interface, including size, shape and bond geometry; and (48) wherein the software program evaluates at least one of the following: a set of modeling data, a set of durability data or a set of evaluation data.

It should be noted that these are product-by-process limitations. It has been found that, “Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process” – *In re Thorpe*, 777 F. 2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985).

The final product is capable of being made if: a) the selection of materials was done using a text containing data; b) the determination of adhesive strain and strain intercept was done experimentally or mathematically by hand; and c) the evaluation of the interface was done experimentally or mathematically by hand. These process steps would have had no bearing on the actual final product whether it was made by the claimed process or by steps a), b), and c).

Therefore, the product of Watanabe et al. would have anticipated or would have been an obvious variant of the claimed article.

21. Claims 40-42, 44-46, 48-51, and 53-57 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Taniguchi (US Pat. No. 3,932,689) and Asai et al. (US Pat. No. 4,345,959).

Normally, only one reference is used in making a rejection under 35 U.S.C. 102; however, a 35 U.S.C. 102 rejection over multiple references has been held to be proper when the extra references are cited to: (A) Prove the primary reference contains an “enabled disclosure;” (B) Explain the meaning of a term used in the primary reference; or (C) Show that a characteristic not disclosed in the reference is inherent. In the following rejection, Asai et al. is used to show that *Epikote 828* is a Bisphenol-A type epoxy material.

Regarding claims 40-42, 44-46, 48, 56, and 57, Taniguchi discloses **(40)** an electronic component (Abstract; column 4, line 55 through column 5, line 40) comprising: 1) a candidate substrate (Figure 1; column 4, lines 59-62); and 2) a candidate polymer, wherein the candidate polymer comprises a material that exhibits an adhesive strain when coupled to the candidate substrate (Figure 1; column 4, lines 59-62); wherein the candidate substrate and the candidate polymer are coupled to one another to form an interface (Figure 1; column 4, lines 59-62); **(44)** wherein the candidate polymer comprises at least one of the following chemical precursors *see claim for list* (Figure 1; column 4, lines 59-62; Table; *see Asai et al: column 6, lines 16-19*); and **(45 & 46)** wherein the candidate polymer is amorphous, *crosslinked*, crystalline or branched (Figure 1; column 4, line 59 through column 5, line 2).

Regarding claims 49-51 and 53-57, Taniguchi discloses **(49)** An electronic component (Abstract; column 4, line 55 through column 5, line 40) comprising: 1) a candidate substrate (Figure 1; column 4, lines 59-62); 2) a candidate first polymer, wherein the candidate first polymer comprises a material that exhibits an adhesive strain when coupled to the candidate substrate and when coupled to the candidate second polymer (Figure 1; column 4, lines 59-62); and 3) a candidate second polymer, wherein the candidate second polymer comprises a material

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that exhibits an adhesive strain when coupled to the candidate first polymer (Figure 1; column 4, line 62 through column 5, line 2); wherein the candidate substrate, the candidate first polymer and the candidate second polymer are coupled to one another to form a multi-layered article having at least two interfaces (Figure 1; column 4, line 59 through column 5, line 2); (53) wherein at least one of the candidate polymers comprises at least one of the following chemical precursors *see claim for list* (Figure 1; column 4, line 59 through column 5, line 2; Table; *see Asai et al: column 6, lines 16-19*); and (54 & 55) wherein at least one of the candidate polymers is amorphous, *crosslinked*, crystalline or branched (Figure 1; column 4, line 59 through column 5, line 2).

Taniguchi does not disclose the electronic component according to claim 40 or 49, wherein: (40 & 49) the substrate, the first polymer (and second polymer) are selected as candidates based on a software program; wherein:

(41 & 50) the software program comprises strain cycling data; (56) wherein the material that exhibits high adhesive strain is determined by the software program; and (57) wherein the software program determines strain intercept; or

(42 & 51) the software program evaluates at least one property of the interface, including size, shape and bond geometry; and (48) wherein the software program evaluates at least one of the following: a set of modeling data, a set of durability data or a set of evaluation data.

It should be noted that these are product-by-process limitations. It has been found that, “Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does

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not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process” – *In re Thorpe*, 777 F. 2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985).

The final product is capable of being made if: a) the selection of materials was done using a text containing data; b) the determination of adhesive strain and strain intercept was done experimentally or mathematically by hand; and c) the evaluation of the interface was done experimentally or mathematically by hand. These process steps would have had no bearing on the actual final product whether it was made by the claimed process or by steps a), b), and c).

Therefore, the product of Taniguchi would have anticipated or would have been an obvious variant of the claimed article.

### ***Response to Arguments***

22. Applicant's arguments with respect to the pending claims have been considered but are moot in view of the new ground(s) of rejection.

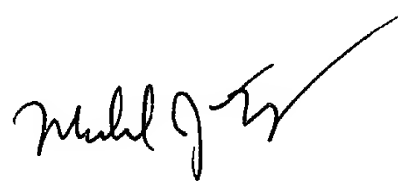
### ***Communication***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael J Feely whose telephone number is 571-272-1086. The examiner can normally be reached on M-F 8:30 to 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski can be reached on 571-272-1302. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read "Michael J. Feely", with a long, sweeping horizontal line extending to the right.

Michael J. Feely  
Patent Examiner  
Art Unit 1712

July 25, 2004